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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,836	03/26/2004	Shinji Miwa	118929	7966
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			ART UNIT 2624	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/809,836

Applicant(s)

MIWA ET AL.

Examiner

Dennis Rosario

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 4-6 and 12-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/26/04</u> . | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

1. Claims 4-6 and 12-44 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Groups I,III and IV, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 7/9/07.
2. Applicant's election with traverse of Group II in the reply filed on 7/9/07 is acknowledged. The traversal is on the ground(s) that there is no serious burden on the examiner. This is not found persuasive because a serious burden according to the examiner is searching and writing subsequent office actions as requested by the applicant for 4 independent inventions or 13 independent claims that are classified in 4 different areas as shown in the requirement for the restriction of 6/8/07. Thus, searching and writing subsequent office actions for one invention or corresponding independent claims that are classified in one area are not a serious burden on the examiner.

The requirement is still deemed proper and is therefore made FINAL.

Specification

3. A preliminary examination of this application reveals that it includes terminology which is so different from that which is generally accepted in the art to which this invention pertains that a proper search of the prior art cannot be made. For example:

On page 34, [0174], line 2 has "pi-2" what does each character in "pi-2" mean? Based on initial examination "pi-2" appears to be subtracting 2 from pi. The examiner thinks that the "i-2" in "pi-2" is a subscript; however, the notation "pi-2" as currently presented is confusing.

On page 34, [0174], line 5 has "bi=ai-ai-1" which is just "bi=-1" according to the examiner's examination. The examiner concluded that "i" and "i-1" are subscripts are mentioned above. Please clarify if such a conclusion is true.

On page 35, [0175], line 5 has "bi + >=A" what does "+" represent? Other than the "+" symbol the examiner understands that bi is greater than or equal to A.

Applicant is required to provide a clarification of these matters or correlation with art-accepted terminology so that a proper comparison with the prior art can be made. Applicant should be careful not to introduce any new matter into the disclosure (i.e., matter which is not supported by the disclosure as originally filed).

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claim 10 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 10 is drawn to functional descriptive material NOT claimed as residing on a computer readable medium. MPEP 2106.IV.B.1(a) (Functional Descriptive Material) states:

“Data structures not claimed as embodied in a computer-readable medium are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer.”

“Such claimed data structures do not define any structural or functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure’s functionality to be realized.”

Claim 10, while defining a computer program, does not define a “computer-readable medium” and is thus non-statutory for that reasons. A program can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on “computer-readable medium” in order to make the claim statutory.

“In contrast, a claimed computer-readable medium encoded with the data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure’s functionality to be realized, and is thus statutory.” - MPEP 2106.IV.B.1(a)

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1,7,8 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Fujii et al. (US Patent Application Publication No.: US 2002/0114015 A1).

Regarding claim 1, Fujii discloses an image processing method to detect a target image including a set of a plurality of pixels in each of a plurality of image object regions, comprising:

a) when one of adjacent image object regions is a first image object region and the other image object region is a second image object region (or a image with foreground and background as shown in fig. 15), a group of boundary pixels (a ramp of pixels as shown in an upper plot of pixels in fig. 10) interposed between a first group of pixels (lower left group of horizontal pixels in said plot) that constitute the first image object region and a second group of pixels (upper right group of horizontal pixels in said plot) that constitute the second image object region being detected (as indicated in fig. 10 as EDGE WIDTH DETECTION VALUE) as a boundary region between the first image object region and the second image object region based on pixel information (fig. 10:POSITION OF PIXEL) on the pixels and predetermined region-determining conditions (as indicated in fig. 10 as Th1 and Th2).

Regarding claim 7, Fujii discloses The image processing method according to claim 1, the predetermined region-determining conditions being the following conditions 1 to 3:

(CONDITION 1) the first group of pixels (or said lower left horizontal pixels) is a group of pixels in which the difference in the pixel values between adjacent pixels is smaller than a predetermined threshold value A (fig. 10: Th1), and which are continuously arranged in a predetermined direction from an attention pixel;

(CONDITION 2) the group of boundary pixels (or said ramp) is a group of pixels in which

2a) the difference in the pixel values between adjacent pixels is equal to or larger than the predetermined threshold value A (said Th1) and

2b) the difference in the changes in the pixel values between the adjacent pixels is smaller than a predetermined threshold value B (Th2 in fig. 10),
and

2c) which are continuously arranged in the predetermined direction from the first group of pixels; and

(CONDITION 3) the second group of pixels (or said upper right horizontal pixels) is a group of pixels in which

3a) the difference in the pixel values between adjacent pixels is smaller than the predetermined threshold value A (said Th1) and

3b) the difference in the pixel values between the first group of pixels (said lower left horizontal pixels) and the second group of pixels (said upper right horizontal pixels) is equal to or larger than a predetermined threshold value C (or said Th1 which is described in the context of "equal to" in paragraph [0100], line 7), and which are continuously arranged in the predetermined direction from the group of boundary pixels.

Note that the claimed threshold value A and threshold value C are the same values as applied with Fujii while the applicant's specification may indicate that threshold value A and threshold value C are different which ought to overcome the rejection of claim 7 in view of Fujii.

Claim 8 is rejected the same as claim 1. Thus, argument similar to that presented above for claim 1 is equally applicable to claim 8.

Claim 10 is rejected the same as claim 1. Thus, argument similar to that presented above for claim 1 is equally applicable to claim 10.

8. Claims 2,3,9 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Gossett et al. (US Patent 6,803,920 B2).

Regarding claim 2, Gossett discloses an image processing method to divide a target image including a set of a plurality of pixels into a plurality of image object regions, comprising:

a) when one of adjacent image object regions (fig. 5 shows an image of a black triangle object region and the remaining portion of the image a white object region) is a first image object region (said triangle) and the other image object region is a second image object region (said white object region), a group of boundary pixels (represented in fig. 5 as boxes 7 and 11) interposed between a first group of pixels (box 15 of fig. 5) that constitute the first image object region and a second group of pixels (box 3 of fig. 5) that constitute the second image object region

a1) being detected (the group of boundary pixels is detected as indicated in all of fig. 8A) as a boundary region between the first image object region and the second image object region based on pixel information (fig. 8A,num. 80,82 and 81) on the pixels and predetermined region-determining conditions (such as the grid in fig. 5),

b) a division line (as shown in fig. 8C) being determined (as shown in fig. 8B corresponding to an inverted square pulse) in the boundary region based on the values of the pixels that constitute the boundary region, and

c) the boundary region being divided (since the pulse serves to segment regions which is the same as the claimed boundary region being divided) into a region (fig. 8B,num. 81) adjacent to the first image object region and the other region (fig. 8B,num. 80) adjacent to the second image object region using the division line as a boundary.

Regarding claim 3, Gossett discloses the image processing method according to claim 2,

a) pixels having intermediate values (fig. 8A,num. 82) between the values of the pixels (fig. 8A,num. 81) positioned along the boundary of the first image object region and the values of the pixels (fig. 8A,num. 80) positioned along the boundary of the second image object region or values close to the intermediate values

a1) being selected (82 is selected as indicated by said pulse) as the division line (fig. 8c, num. 85) in the boundary region (fig. 8A,numerals 80 and 82) so that the selected pixels are continuously arranged along the boundary (as shown in fig. 8C as a solid black and white border).

Claim 9 is rejected the same as claim 2. Thus, argument similar to that presented above for claim 2 is equally applicable to claim 9 except for the additional limitation of:

a) a region information generating device (or "image processor: in col. 6, line 1) to divide any one of:

- a1) the first image object region (fig. 8A,num. 81) and
- a2) the second image object region

together with the boundary region (as shown in fig. 8A,num. 82) to thus synthesize (as indicated in fig. 8C,num.,. 85) the divided image object region and boundary region (fig. 8C,num. 84) with the background image (fig. 8C,num. 83) and to control the pixel values (as indicated in fig. 8C,num. 85 that generates an intentional solid black/white edge) of the group of pixels (fig. 8C,numerals 83 and 84) that constitute the boundary region according to the pixel values (fig. 8C,num. 83) of the group of pixels that constitute the background image (fig. 8C,num. 83).

Claim 11 is rejected the same as claim 9. Thus, argument similar to that presented above for claim 9 is equally applicable to claim 11 except for the additional limitation of a program as disclosed in Gossett as "computer pro-gram" in col. 1, lines 49,50.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Itokawa (US Oatent 6,404,901 B1) is pertinent as teaching a method of dividing a

boundary blocks into smaller boundary blocks as shown in figures 16 and 17.

Bhattachariya (US Patent 7,174,049 B2) is pertinent as teaching a method of cutting a transition zone as shown in fig. 4,numerals 14 and 15.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Rosario whose telephone number is (571) 272-7397. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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